

We claim:

1 1. A method of determining communication link quality employing beacon
2 signals, the method comprising the steps of:

3 equipping a plurality of communications satellites with beacon transmitters that
4 generate beacon signals including a continuous wave (CW) tone and a coded signal that are
5 different for each of the communications satellites; and

6 providing a communications device, that is capable of establishing UHF
7 communications links with the communications satellites, with means for receiving and
8 processing the beacon signals to determine the quality of the UHF communications links.

1 2. The method of determining communication link quality employing beacon
2 signals of claim 1, wherein for each of the communications satellites:

3 the coded signal is within a communications bandwidth employed by the
4 communications satellite; and

5 the CW tone is out of the communications bandwidth.

1 3. The method of determining communication link quality employing beacon
2 signals of claim 1, wherein the communication device comprises a transponder.

1 4. The method of determining communication link quality employing beacon
2 signals of claim 1, wherein the communication device comprises a mobile voice and/or data
3 communicator.

1 5. The method of determining communication link quality employing beacon
2 signals of claim 1, wherein the means for receiving and processing the beacon signals
3 comprises a processor.

1 6. The method of determining communication link quality employing beacon
2 signals of claim 1, wherein the means for receiving and processing the beacon signals
3 comprises one or more beacon receivers.

1 7. The method of determining communication link quality employing beacon
2 signals of claim 6, wherein the one or more beacon receivers comprise a continuous wave
3 (CW) tone beacon receiver.

1 8. The method of determining communication link quality employing beacon
2 signals of claim 6, wherein the one or more beacon receivers comprise a coded signal
3 beacon receiver.

1 9. The method of determining communication link quality employing beacon
2 signals of claim 1, further comprising the step of:
3 providing the communications device with means for communicating to a user
4 information pertaining to the quality of the UHF communications links.

1 10. The method of determining communication link quality employing beacon
2 signals of claim 9, wherein the means for communicating information provides a real time
3 indication of link quality.

1 11. The method of determining communication link quality employing beacon
2 signals of claim 9, wherein the means for communicating information comprises a display
3 device operably interconnected to the communications device.

1 12. The method of determining communication link quality employing beacon
2 signals of claim 9, wherein the information includes noise information.

1 13. The method of determining communication link quality employing beacon
2 signals of claim 9, wherein the information includes interference information.

1 14. The method of determining communication link quality employing beacon
2 signals of claim 9, wherein the information includes scintillation information.

1 15. The method of determining communication link quality employing beacon
2 signals of claim 1, further comprising the step of:

3 providing the communications device with a means for adjusting a transmission
4 power of the communications device.

1 16. The method of determining communication link quality employing beacon
2 signals of claim 15, wherein the means for adjusting transmission power comprises a booster
3 device that includes an alternative high gain antenna.

1 17. The method of determining communication link quality employing beacon
2 signals of claim 16, wherein the alternative high gain antenna is a log periodic antenna.

1 18. The method of determining communication link quality employing beacon
2 signals of claim 16, wherein the alternative high gain antenna is a Yagi antenna.

1 19. The method of determining communication link quality employing beacon
2 signals of claim 16, wherein the alternative high gain antenna is articulated so that it can be
3 manipulated as desired into an opened operating configuration or a collapsed storage
4 configuration.

1 20. A method of determining communication link quality employing beacon
2 signals, the method comprising the step of:
3 employing one or more beacon receivers and a processor to receive and process
4 beacon signals from one or more communications stations to determine link quality between
5 the communications device and the communications stations, the beacon signals including a
6 continuous wave (CW) tone and a coded signal that are different for each of the
7 communications stations.

1 21. The method of determining communication link quality employing beacon
2 signals of claim 20, wherein the processor is programmed to process data pertaining to
3 measured signal levels of the beacon signals to determine one or more link impairment
4 factors.

1 22. The method of determining communication link quality employing beacon
2 signals of claim 21, wherein the link impairment factors include a propagation loss factor.

1 23. The method of determining communication link quality employing beacon
2 signals of claim 21, wherein the link impairment factors include an interference factor.

1 24. The method of determining communication link quality employing beacon
2 signals of claim 21, wherein the link impairment factors include a noise factor.

1 25. The method of determining communication link quality employing beacon
2 signals of claim 20, wherein the processor is programmed to process data pertaining to
3 variations in measured signal levels of the beacon signals to determine one or more link
4 impairment factors.

1 26. The method of determining communication link quality employing beacon
2 signals of claim 25, wherein the link impairment factors include a scintillation factor.

1 27. The method of determining communication link quality employing beacon
2 signals of claim 20, wherein the processor is programmed to sequentially determine the link
3 qualities.

1 28. The method of determining communication link quality employing beacon
2 signals of claim 20, wherein the communications stations comprise UHF communications
3 satellites.

1 29. The method of determining communication link quality employing beacon
2 signals of claim 20, wherein the communications stations are part of one or more terrestrial
3 cellular networks.

1 30. A method of determining communication link quality employing beacon
2 signals, the method comprising the step of:
3 providing a machine-readable program to a processor that, when executed, enables

4 the processor to control a communications device to process beacon signals from one or
5 more communications stations, the beacon signals including a continuous wave (CW) tone
6 and a coded signal that are different for each of the communications stations, to determine
7 link quality between the communications device and the communications stations and to
8 facilitate user selection of an available communications station that is most advantageous for
9 communications.